UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,657	11/13/2003	Jiebo Luo	87007DMW	2589

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EXAMINER
KRASNIC, BERNARD

ART UNIT	PAPER NUMBER
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
	10/712,657	LUO ET AL.
	Examiner	Art Unit	
	Bernard Krasnic	2609	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-7* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *11-13-2003 and 4-11-2005*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1.   Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2.   The abstract of the disclosure is objected to because it is not narrative. It consists and has been drafted as one long run-on sentence, much like claim 1, which is improper. The intent of the abstract is to give a concise but brief statement of the disclosure or the invention as a whole consisting of a series of complete sentences forming a single paragraph.

Correction is required. See MPEP § 608.01(b).

3.   The disclosure is objected to because of the following informalities:

Page 4, lines 31-32, page 5, line 1 respectively: It is suggested to use proper word spacing for example "ExposureTime (ET)" should be -- Exposure Time (ET) --.

Appropriate correction is required.

Claim Objections

4.   Claim 7 is objected to because of the following informalities:

Claim 7, line 1: "A method" should be -- The method --.

Claim 7, lines 1-2: "the image enhancement is color balancing" should be -- the

customized image enhancement procedure is color balancing --.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

6.   Claim 5 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

In claim 5, a "computer program product for implementing the method" is not

subject matter limited to that which falls within a statutory category of invention because

it is not limited to a process, machine, manufacture, or a composition of matter.

Instead, it includes a computer program. A computer program does not fall within a

statutory category since it is clearly not a series of steps or acts to constitute a process,

not a mechanical device or combination of mechanical devices to constitute a machine,

not a tangible physical article or object which is some form of matter to be a product and

constitute a manufacture, and not a composition of two or more substances to constitute

a composition of matter.

It is suggested to replace the existing "A computer program product for

implementing" to -- A computer-readable medium storing a computer program for

causing a computer to implement -- as described by the interim guidelines on page 53

to define a structural and functional interrelationship between the computer program

and the rest of the computer.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8.   Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Tretter et

al (US 2002/0140843 A1).

Re Claim 1: Tretter discloses a method for scene classification / content-based and

metadata based classification (see abstract, lines 1-3) of a digital image comprising the

steps of (a) extracting one or more pre-determined camera metadata tags / meta data

from the digital image (see abstract, lines 6-10, paragraph [0008], lines 9-12); (b)

obtaining an estimate of image class / meta data based classification based on the

extracted camera metadata tags / meta data (see abstract, lines 1-3, 10-14, paragraph

[0008], lines 15-20), thereby providing a metadata-based estimate; (c) obtaining an

estimate of image class / content based classification based on image content features /

content based data (see abstract, lines 1-3, 10-14, paragraph [0008], lines 15-20),

thereby providing an image content-based estimate; and (d) producing a final estimate

of image class / combination of both the content based and meta data based

classification based on a combination of the metadata-based estimate / meta data

based classification and the image content-based estimate / content based

classification (see abstract, lines 10-14, paragraph [0008], lines 15-20).

Re Claim 2: Tretter discloses the metadata extracted in step (a) includes one or more of

exposure time, aperture, shutter speed, brightness value, subject distance / focusing

distance and flash fired / flash - no flash (see abstract, lines 6-10, paragraph [0008],

lines 9-12).

Re Claim 3: Tretter discloses the image content features in step (c) include one or more

of color, texture and semantic features (see paragraph [0003], lines 7-8, paragraph

[0008], lines 1-3, paragraph [0025], lines 6-11).

9.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

10.   Claim 6 is rejected under 35 U.S.C. 102(e) as being anticipated by Schroder et al

(US 7,020,330 B2).

Re Claim 6: Schroder discloses a method for image enhancement / color correction

process (see title) of a digital image comprising the steps of (a) performing scene

classification / classification (2, 24) into a characteristic image class of the digital image

into a plurality of scene classes / image classes based on image feature / local features

and metadata (11) (see Figs. 1 and 2, abstract, col. 5, lines 1-8); and (b) applying a

customized image enhancement procedure / color correction process for assigned

image class (3) in response to the scene class of the digital image (see Fig. 1, abstract,

lines 8-11).

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

12.   Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Tretter in view of Vivarelli ("Using Bayesian neural networks to classify segmented

images" - IEEE - July 1997, pages 268-273). The teachings of Tretter are discussed above.

Re Claim 5 as understood: Tretter discloses a computer program product for implementing the method as claimed in claim 1 (see claim 9, the processor is configured to implement a program to classify a technique of utilizing a combination of both the content based and meta data based classification).

However, Tretter fails to teach that the combination in step (d) is obtained by using a Bayesian network

Vivarelli, as recited in claim 4, discloses the combination in step (d) is obtained by using a Bayesian network (see page 269, section BAYESIAN TRAINING OF NEURAL NETWORKS, paragraphs 1-2, Vivarellis Bayesian neural network can replace Treters nodal or neural network analysis for a final classification of a digital image).

Therefore, in view of Vivarelli, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tretters method of making a final classification using a combination of both content based and meta data based classification through nodal analysis (see Treter, paragraph [0009], lines 1-11, paragraph [0010], lines 1-5) by replacing it with a Bayesian network in order to further improve the accuracy of the classification by applying the appropriate contribution weights to the two classifiers (content based and meta data based classification).

13.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schroder

in view of Cooper ("A novel approach to color cast detection and removal in digital

images" - SPIE - Jan 2000, vol 3963, pages 167-177). The teachings of Schroder are

discussed above.

However, Schroder fails to teach the image enhancement is color balancing and

the customized image enhancement procedure includes retaining or boosting brilliant

colors in images classified as sunset scenes and removing warm-colored cast from

indoor images classified as tungsten-illuminated scenes.

Cooper, as recited in claim 7, discloses the image enhancement is color

balancing / color cast due to illuminant sources removal and the customized image

enhancement procedure includes retaining or boosting brilliant colors in images

classified as sunset scenes / cast removal from outdoor sunset conditions and removing

warm-colored cast from indoor images / cast removal from indoor natural images

classified as tungsten-illuminated / unusual illuminant scenes (see title, abstract, line 1,

section 7 - RESULTS, paragraph 1, lines 5-6, paragraph 2, lines 1-3).

Therefore, in view of Cooper, it would have been obvious to one of ordinary skill

in the art at the time the invention was made to modify Schroders image enhancement

using color correction by including the color correcting color cast removal feature in

order to correct the color cast which is encountered in indoor and outdoor images such

as sunset images.

Conclusion

14.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kowald discloses a visual language classification system; Funston discloses a color correcting flash apparatus, camera, and method; Parulski discloses a camera having verification display and white-compensator and imaging method; Gasparini discloses a color correction for digital photographs; Boutell discloses a sunset scene classification using simulated image recomposition; Cooper discloses a color segmentation as an aid to white balancing for digital still cameras; Luo discloses indoor vs. outdoor classification of consumer photographs using low-level and semantic features; Szummer discloses indoor-outdoor image classification; Moser discloses a usage of DSC meta tags in a general automatic image enhancement system.

15.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Krasnic whose telephone number is (571) 270-1357. The examiner can normally be reached on Mon-Thur 8:00am-3:00pm and every other Friday 8:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk (James) Lee can be reached on (571) 272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bernard Krasnic
January 22, 2007

JONG SUK LEE
SUPERVISORY PATENT EXAMINER